CGIAR Research Program on
Climate Change, Agriculture and Food Security (CCAFS)

What is a Research Protocol, and how to use one
Video Transcript

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Introduction

Throughout an activity it is easy to focus on a small part of the research – the obvious - the outcomes: the objectives and the results. But there are stacks of previous research, and an enormous number of decisions that have been made about everything from methods and materials, data management, and analysis, which are all hiding in the background propping up the objectives and the results. All of the structure underneath the publication headline results requires planning, reviewing, and attention to detail and it is this structure, keeping afloat the results, which a document called a protocol captures.

Writing a good research protocol

Within a programme there are usually several projects focusing on different areas of research, within each project there are usually many activities which focus on different aspects of the project, for example field trials, surveys, climate analysis. This video discusses protocols at the lowest level of this hierarchy – the activity level.

What is it?

A protocol is simply: A written document, which every research activity should have which details exactly how the activity is to be carried out or has been carried out.

In the initial stages of an activity a protocol is the plan.

During the activity any deviations from the plan should be recorded in detail in an updated version of the protocol.

At the end of an activity the final protocol should be an accurate reflection of the actual activity, with enough detail to enable another researcher to repeat the activity, using the same methods, to exactly the same standards, using only the protocol.

Incentive for producing a good protocol

A good protocol is a wonderful source of material for copying and pasting into reports, and presentations, and when the time comes to write publication papers the materials and method section can usually be completely lifted from the protocol, and other parts can be used to contribute to the background and result sections.

Producing a good protocol is not as hard and time consuming as you think! You can usually copy and update previous or similar protocols, and you can copy across chunks of activity information from the project proposal.

The final incentive for producing a protocol is that it ensures that your research is repeatable, this is essential if you want to add credibility to your results and yourself as a researcher.

Why should I do it?

Why is a protocol important and why should time be spent keeping it up-to-date?

- At the planning stage it forms a basis for discussion with other scientists and a statistician.
- Sharing a single document ensures that everyone, such as collaborating scientists and technicians, involved in the activity has a common understanding of what will be done.
- It is essential to request and receive feedback on the research activity plan, and this fulfils a key role in the process of peer review.
- It is a detailed plan that can be approved prior to the activity starting if required by management higher up the hierarchy, either at the project or programme level.
- Following a clear, well thought out and reviewed plan can reduce the chance of mistakes being made during implementation.

One protocol containing the plan and conduct of an activity can:

- Reduce the differences in the implementation if the activity is to be carried out in different locations by different teams.
- Provide continuity which is particularly important in long-term projects where staff turnover is likely.
- Keep a record of the data collection process which can help in the analysis and interpretation stages of the activity.

- Finally, it can be archived, along with the data, for use in the future. Should other scientists wish to verify your results they should be able to use the protocol to repeat your activity.

How to use it

1. SHARE IT

As soon as an initial draft of the activity protocol is complete, before the activity has started – share it!

Share it with anyone who might be able to improve the effectiveness of the research, they may be fellow scientists, or statisticians, don't forget that people outside of your location may also be able to contribute.

Then you should update it, with reviewers' feedback.

2. DISSEMINATE IT

Ensure everyone involved in the activity has a copy of the peer reviewed updated protocol, then the necessary team members can start their tasks collecting materials, training field staff or enumerators, creating and translating questionnaires, ensuring that data on the key variables listed in the protocol are being collected.

3. CONDUCT DATA COLLECTION USING IT

The protocol should then be used in the actual implementation of the activity. The protocol can be used to ensure the correct sampling strategy is being used to select households, or used to check the correct application of treatments to a plot. Any instances where the activity has deviated from the plan in the protocol should be noted and detailed in a new version of the protocol.

4. ANALYSE USING IT

When it comes to analysing the data from the activity the analyst should be familiar with the protocol, and analyse the data following the details specified in the analysis section. Obviously additional analyses can be conducted, but at a minimum the analysis stated in the protocol should be carried out as this should directly relate to the activity aims, objectives and hypotheses.

5. ARCHIVE IT

Once the activity is complete, and the protocol is up-to-date with all of the deviations from the original plan so that it is now a complete recording of how the activity was actually conducted, it should be archived along with the data.

A key aspect of research is that it is repeatable. Another scientist should be able to conduct the same activity and reach the same conclusions. Without a protocol detailing how the activity took place an activity is simply not repeatable.

Without a protocol an activity is susceptible to sinking; whether this is through vital knowledge being lost as team members move to new jobs, the activity being conducted completely differently in different sites making a comparison impossible, the activity being conducted in such a way that it can no longer answer the objectives, or the activity being unrepeatable and therefore the results questionable. To avoid this happening and to keep your results afloat – spend time producing a protocol, it will improve the quality of your research, and add credibility.

We hope this video has explained what a protocol is and why it is such an important document to produce, maintain and archive for every research activity you are involved in. Further information can be found in the guide ‘Writing research protocols: a statistical perspective’ 2006 by Wilson and Abeyasekera available on the Statistical Services Centre’s website, and in the book ‘Good Statistical Practice for Natural Resources Research’ 2004 by Stern, Coe, Allan and Dale.

Appendix I – CCAFS Data Management Support Pack

This document is part of the CCAFS Data Management Support Pack produced by the Statistical Services Centre, University of Reading, UK. The following materials are available in the pack:

0. Data Management Strategy
    a. CCAFS Data Management Strategy
1. Research Protocols
    a. Writing Research Protocols – a statistical perspective
    b. Preparation of Research Protocols – Good Practice Case Study
    c. What is a Research Protocol, and how to use one (Video & Transcript)
    d. Details of what a Research Protocol should contain (Video & Transcript)
2. Data Management Policies & Plans
    a. Creating a Data Management Plan
    b. Data Management Plan (Video & Transcript)
    c. Example Data Management Activity Plan
    d. Example Consent Form
3. Budgeting & Planning
    a. Budgeting & Planning for Data Management
    b. ToR Data Support Staff
    c. Budgeting & Planning (Video & Transcript)
4. Data Ownership
    a. Data Ownership and Authorship
    b. Template – Data Ownership Agreement
    c. CCAFS Data Ownership & Sharing Agreement
    d. Data Ownership & Authorship (Video & Transcript)
5. Data & Document Storage
    a. Creating and Using a DDS
    b. DDS Introduction – (Video & Transcript)
    c. DDS Organisation – (Video & Transcript)
    d. DDS Ownership – (Video & Transcript)
    e. Introduction to Dropbox – (Video & Transcript)
6. Archiving & Sharing
    a. Archiving & Sharing Data
    b. Data and Documents to Submit for Archiving – a checklist
    c. MetaData
    d. Archiving & Sharing (Video & Transcript)
    e. Metadata (Video & Transcript)
    f. CCAFS HBS Questionnaire
    g. CCAFS HHS Code Book
    h. CCAFS Training Manual for Field Supervisors

7. CCAFS Data Portals
    a. Portals for CCAFS Outputs
    b. AgTrials Summary
    c. CCAFS-Climate Summary
    d. DSpace Introduction
    e. Introduction to Dataverse (Video & Transcript)
    f. Creating a Dataverse (Video & Transcript)
    g. Dataverse Study Catalogue
    h. CCAFS Dataverse (Video & Transcript)
8. Data Quality & Organisation
    a. Data Quality Assurance
    b. Guidance for handling different types of Data
    c. Transition from Raw to Primary Data
    d. Data Quality Assurance (Video & Transcript)
    e. Guidance for handling different types of data (Video & Transcript)
    f. Transition from Raw to Primary Data (Video & Transcript)